# Northeastern Area
# State and Private Forestry

# Strategic Plan
# Fiscal Years 2013–2018

U.S. Department of Agriculture

**Forest Service**

Northeastern Area
State and Private Forestry
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Newtown Square, PA 19073

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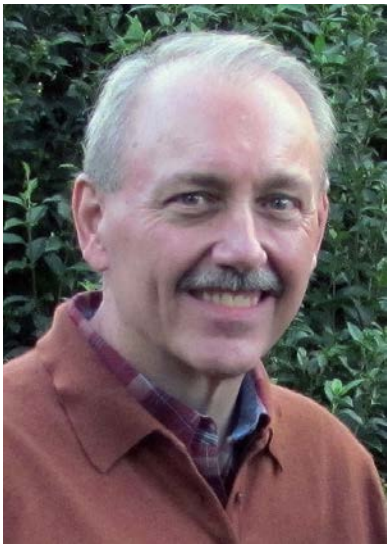
# Letter from the Director



I am pleased to present the U.S. Forest Service Northeastern Area State and Private Forestry Strategic Plan for Fiscal Years 2013–2018, a document that will chart our course for the next 5 years. It identifies the most important forest-related challenges and opportunities we face and sets priorities to guide us as we work with others toward our vision for forests in the 21st century.

My thanks go to all the partners and employees who had a hand in shaping this plan. Developing and carrying out this plan provides excellent opportunities to engage leadership, employees, and partners in strategic thinking, acting, and learning—with an emphasis on being proactive about the forests and our future!

We will be challenged intellectually as never before. As resource professionals, we are working in a climate (pun intended) where forest and natural resource management are increasingly complicated and ever changing. After extensive consultation with employees, partners, and customers, we also revised our mission and vision statements. The revised mission more clearly articulates who we serve and reinforces our strong role in advancing the latest science. The vision for our organization expresses how we will serve as collaborative conservation leaders, while the vision statements for each objective describe a desired future for the forests and the benefits they provide in the region the Northeastern Area serves.

The Northeastern Area is fortunate to have a workforce with skills and expertise in some of the most important aspects of forest and program management—wood for energy, storm recovery, invasive species management, urban forestry, land protection, watershed forestry, forest stewardship, public outreach and education, and grants and information management.

Besides capitalizing on the skills of our current workforce, the new Strategic Plan is based on the Forest Service national priorities for State and Private Forestry: 1) Conserve and Manage Working Forest Landscapes for Multiple Values and Uses, 2) Protect Forests from Threats, and 3) Enhance Public Benefits from Trees and Forests. We added a fourth and equally important goal, Organizational Effectiveness, because technical expertise, technology, safety, workforce diversity, effective communications, and customer service are the fuels that make our achievements possible.

This Strategic Plan has fewer, more detailed strategies compared to our last Strategic Plan. This speaks to doing a few things well, identifying what actions will produce the best outcomes, and deciding how we can best leverage our resources.

This plan is a living document. We will regularly monitor our progress and make revisions when needed, consulting and collaborating with partners along the way.

I hope you are inspired by our collective effort!

Sincerely,

Tony L. Ferguson

Tony L. Ferguson, Director
Northeastern Area State and Private Forestry

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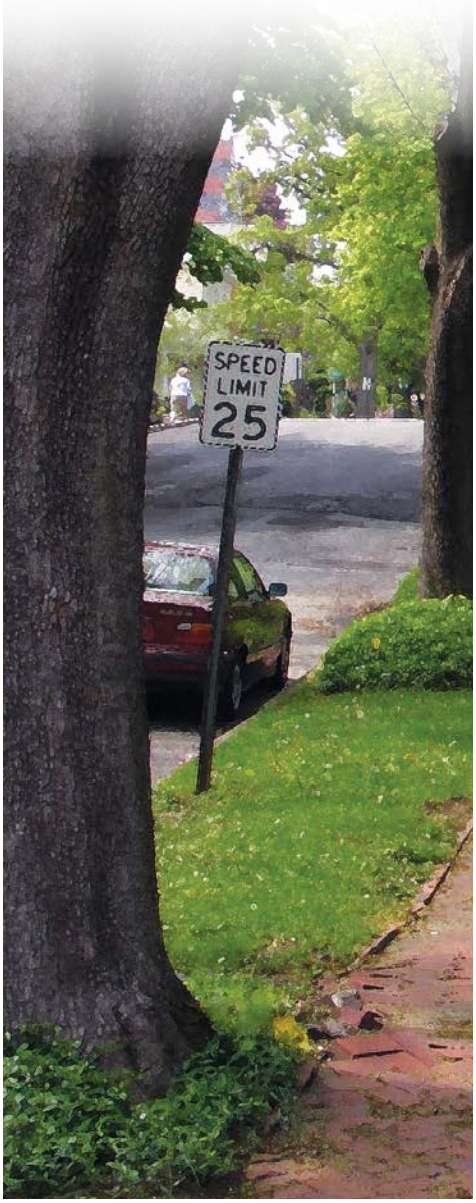
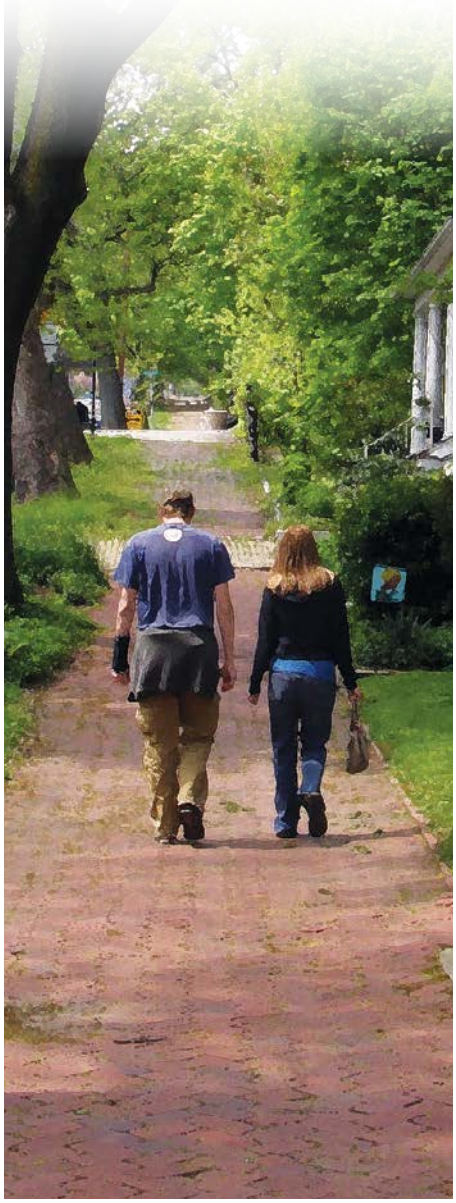
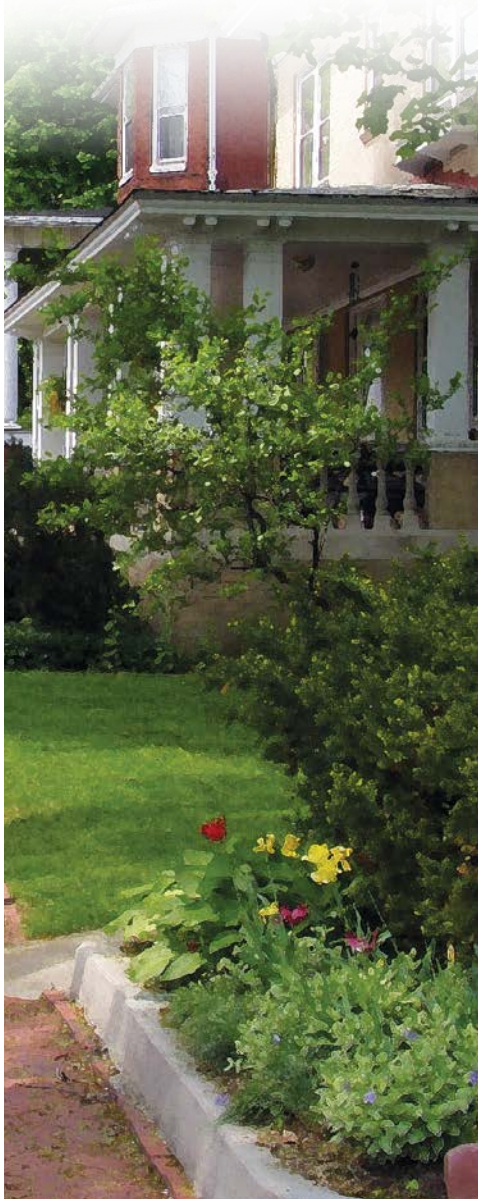




# Acknowledgements

*Thank you to the NA S&PF Strategic Planning Team for leading this process and to all employees and partners, including the "scoping team," who provided input along the way.*

## NA S&PF Strategic Planning Team

**NA Executive Team Sponsor**—Rob Witmer

**Team Lead**—Sherri Wormstead

**Field Office Representatives**
Durham, NH—Rob Clark
Morgantown, WV—Donna Murphy
St. Paul, MN—Marc Roberts

**Facilitation and Process Coach**—Lisa Burban

**Editing and Layout—**Sandra Clark

**Area-Wide Program and Business Unit Representatives**

- Climate Change—Philip DeSenze
- Conservation Education—Susan Cox
- Fire and Aviation—Maris Gabliks
- Forest Health—Manfred Mielke
- Forest Legacy—Jada S. Jackson
- Forest Stewardship—Michael Huneke
- Urban and Community Forestry—Phillip Rodbell
- Business Management—Vickie Caldwell
- Office of Communications—Gail Michaels
- Office of Knowledge Management—Sherri Wormstead
- Wood Education and Resource Center—Ed Cesa

## External Scoping Team for the NA S&PF Strategic Plan

- Joe Arington, President, Wisconsin Woodland Owners Association
- Mark Barford, Executive Director, National Hardwood Lumber Association
- Les Benedict, Assistant Director, Saint Regis Mohawk Tribe, Environment Division
- Andy Finton, Director of Science and Conservation, The Nature Conservancy, Massachusetts
- Randy Gordon, Program Manager, Arbor Day Foundation
- Jerry Greenberg, Vice President, Conservation, American Forest Foundation
- Daniel Kenny, Agricultural Administrator, Ohio Department of Agriculture and Central Plant Board
- Ian MacFarlane, Executive Director, Northeastern Area Association of State Foresters (NAASF)
- Christopher Martin, NAASF President and State Forester, Connecticut Division of Forestry
- Joseph McNeel, Director, West Virginia University Division of Forestry and Natural Resources
- Nancy Ross, Director of Renewable Resources, U.S. Forest Service, Eastern Region
- Thomas Schmidt, Assistant Director, U.S. Forest Service, Northern Research Station
- Lydia Scott, Community Trees Program Manager, The Morton Arboretum and Co-Chair of the Chicago Wilderness Sustainability Team
- Tom Ward, Forester, East National Technology Support Center, Natural Resources Conservation Service
- Steven Weber, Chief of Wildlife Division (Retired), New Hampshire Fish and Game

# Introduction to Northeastern Area State and Private Forestry and Forests of the Northeast and Midwest

The roughly 125 million residents who live in the Northeast and Midwest benefit from forests every day (U.S. Census Bureau 2011). This region (figure 1) is fortunate to have 172 million acres of forests that provide clean air and water, wildlife habitat, and places for recreation (Smith and others 2009). These trees and forests help protect drinking water supplies for 52 million consumers (Barnes and others 2009). Forests-based businesses across the Northeast and Midwest employ 431,000 workers and yield nearly $125 billion in annual shipments of forest products (U.S. Census Bureau 2012).

On the urban front, not only do trees make urban environments more livable, they save money by controlling and cleaning stormwater runoff and by lowering energy costs for heating and cooling (Schwab 2009).

Despite having 9 of the 10 most densely populated States in the country, this region is the Nation's most heavily forested, with 42 percent of its land area in forests (Smith and others 2009, U.S. Census Bureau 2011). In the Northeast and Midwest, the majority of forest benefits come from private land. As shown in figure 1, nearly three-quarters of the region's forests are privately owned. Owners range from large multinational corporations to individual citizens. In fact, some 4.7 million family forest owners collectively hold more than half the region's total forest acreage (Butler 2008).

The region's forests are facing a number of threats such as conversion to developed land, invasive species, and a changing climate. Critical issues threatening the health of trees and forests across the Northeast and Midwest are outlined for each objective, starting on page 8.

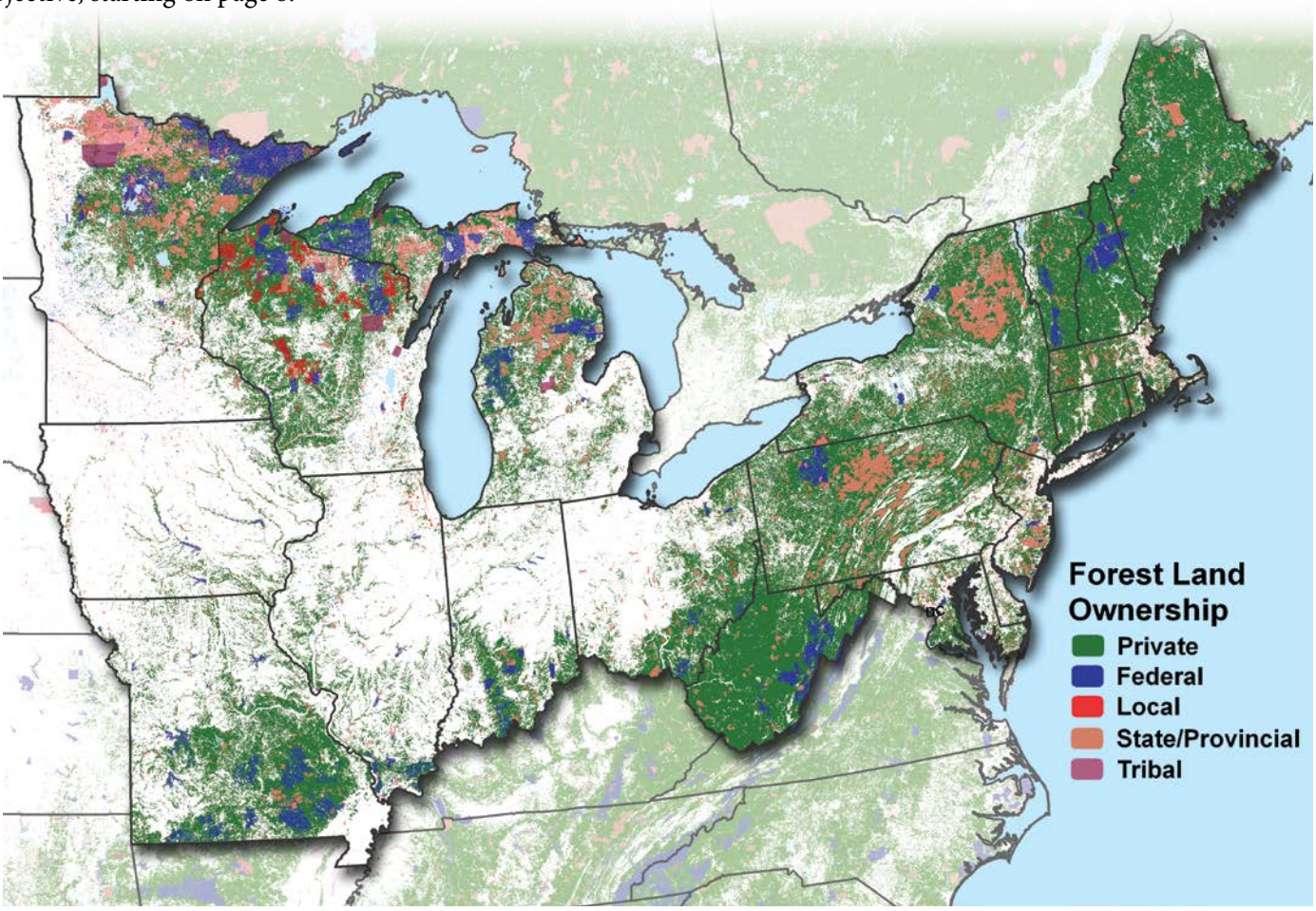



*Figure 1. The Northeastern Area State and Private Forestry serves 20 Northeast and Midwest States and the District of Columbia. Seventy-four percent of the forest land is privately owned (areas in green) (U.S. Department of Agriculture, Forest Service 2013a).*

## Our Mission and Vision

The Northeastern Area State and Private Forestry (NA S&PF) is the branch of the Forest Service, U.S. Department of Agriculture, that is primarily focused on the sustainability of non-Federal forest lands in the 20 States bounded by Maine, Minnesota, Missouri, and Maryland, including the District of Columbia. NA S&PF operates primarily under the Cooperative Forestry Assistance Act.[1] In keeping with the Forest Service mission and the motto of **caring for the land and serving people**, our work covers a spectrum of activities. Our mission statement defines our purpose while our vision statement describes the organization we aspire to be in the long term as we carry out the mission:

**Mission:** The Northeastern Area State and Private Forestry collaborates with States, other Federal agencies, tribes, landowners, and other partners to protect, conserve, and manage forests and community trees across the 20 Northeastern and Midwestern States and the District of Columbia. We provide leadership, technical support, sound science, and financial assistance to help ensure that our forests and trees continue to provide clean water, forest products, wildlife habitat, recreation, and other benefits for present and future generations.

**Vision:** The Northeastern Area State and Private Forestry is a conservation leader that supports forest sustainability—providing the best for both people and the environment now and into the future. We are collaborative, focused, adaptive, and quick to identify and address emerging issues.

The vision statement is an overarching, long-term view for the organization. For each objective in this Strategic Plan, we also present a vision statement for the land and resources.

As part of the way we do business, we are committed to employee safety; civil rights, diversity, and inclusion; and sustainable operations (see sidebar). Continued attention to these "core commitments" is important and, as a result, contributes to the effectiveness and relevance of NA S&PF.

For more information about NA S&PF and our programs, please visit http://www.na.fs.fed.us.

### Core Commitments

Along with the objectives and strategies, these core, long-term commitments will guide us in all we do:

**Civil Rights, Diversity, and Inclusion**—We will continue to lead by example in carrying out Title VII equal opportunity, anti-harassment, and diversity requirements; and conducting Title VI compliance reviews and monitoring in employment and program delivery. Furthermore, we will strive to create a culture of inclusion that awakens and strengthens all people's connection to the land.

**Safety**—People are our greatest resource. We will continue to integrate practices to ensure safety and welfare in our operations and establish a positive, learning approach to safety. We will proactively identify and address practices that present a safety concern throughout our work.

**Sustainable Operations**—We will continue to reduce our environmental footprint and conserve natural resources in our daily operations.

**Motto:** We work with a diverse group of partners to protect, conserve, and manage forests, community trees, and related resources.

[1] The principal laws relating to USDA Forest Service State and Private Forestry Programs are available in publication FS–758 at http://www.fs.fed.us/spf/coop/library/SPF-CF%20handbook.pdf.

# Overview of This Strategic Plan

## Our Approach and Process

We are committed to strategic planning to focus resources on the most important issues and priorities that we are uniquely positioned to address. A Strategic Planning Team made up of NA S&PF staff members that represented each business unit, field office, and program area (see Acknowledgements) reviewed volumes of information and incorporated input from employees and partners to develop the objectives and strategies of this Strategic Plan.

In this process, we considered:

- Common themes from the 2010 State Forest Action Plans (see page 4)[2]
- Resource conditions and trends using criteria and indicators of forest sustainability and the Northern Forest Futures Project regional assessment (see page 4)
- Our legislative authorities and objectives from the NA S&PF FY 2008–2012 Strategic Plan
- Events and emphasis areas that arose since 2008 including the S&PF national priorities, America's Great Outdoors initiative, USDA cultural transformation, and others
- U.S. Forest Service Strategic Plan, the Chief of the Forest Service's "five focus points for the future," and other national-level plans and strategies[3]
- NA S&PF program and resource-specific strategies
- Input from employees and an external Scoping Team consisting of a cross-section of NA S&PF partners (see Acknowledgements) on opportunities, challenges, strengths, and areas to improve
- Internal and external input on the draft strategic issues and draft strategies[4]
- Recommendations from the Northeastern Area Association of State Foresters (NAASF) assessment of NA S&PF
- Landscape Scale Conservation of the Northeast and Midwest position paper, including "Foundations of Collaboration," an agreement endorsed by the U.S. Forest Service and NAASF[5]

We also considered core strengths of NA S&PF to help identify our unique role in addressing the objectives for this Strategic Plan. These include employee technical expertise and customer service; the State and Private Forestry role in sharing information; strong relationships and collaboration with partners that contribute to a wide variety of initiatives across the Northeast and Midwest; and our comprehensive, science-based approach with a regional perspective that places NA S&PF in a position to identify emerging issues and provide regional leadership.

[2] In 2010, every State forestry agency nationwide completed a Statewide Forest Resource Assessment and Strategy, now known as a "State Forest Action Plan." These plans and a regional summary are available at http://www.forestactionplans.org/regions/northeastern-region.

[3] The U.S. Forest Service was in the process of updating the Agency-level strategic plan when this NA S&PF Strategic Plan was finalized. The five focal points for the future are available at: http://www.fs.fed.us/news/2012/speeches/01/focal_points.shtml.

[4] Summaries of input are available on our strategic planning Web site at http://www.na.fs.fed.us/strategic-planning/.

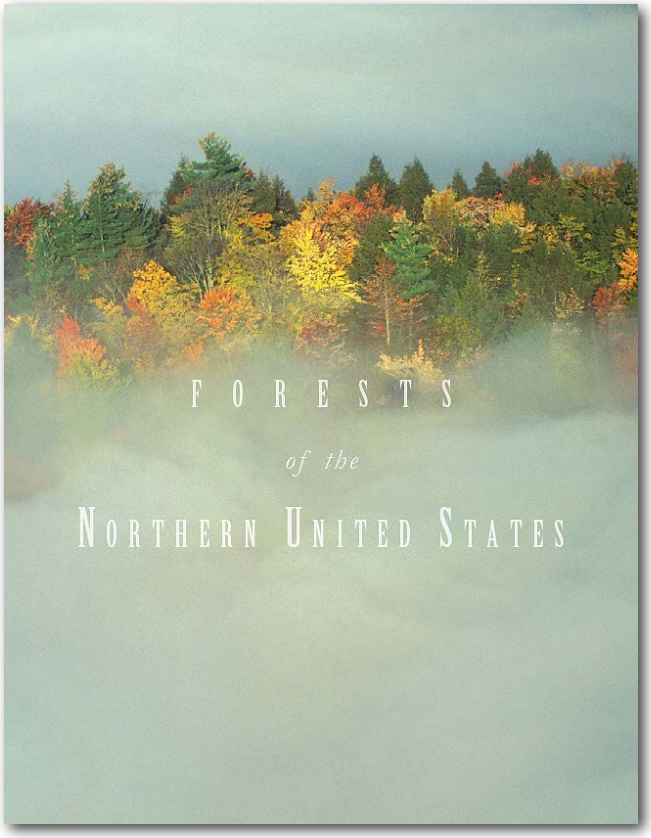
[5] Landscape Scale Conservation in the Northeast and Midwest. December 2009. Available at http://www.na.fs.fed.us/stewardship/pubs/conservation/landscale_conservation.pdf.

## Relationship of the NA S&PF Strategic Plan to the State Forest Action Plans

During the Strategic Plan's development, we carefully considered the common themes in issues and goals of the State Forest Action Plans across the Northeast and Midwest (see sidebar) (U.S. Department of Agriculture, Forest Service and NAASF 2011). Our Strategic Plan objectives and strategies address and contribute to each of these common themes. We will continue to work closely with our State and other partners as we carry out the NA S&PF objectives and strategies, which in turn support the State Forest Action Plans.

### Common Themes in Issues and Goals in the 2010 State Forest Action Plans across the Northeast and Midwest

- Keeping forests as forests
- Forest ecosystem health and productivity
- Urban and community forest health and sustainability
- Water, biodiversity, recreation, and other ecosystem services
- Forest products industry and markets
- Sustainable forest management across all ownerships
- Climate change
- Wildfire threats to forests, public safety, and property
- State and private capacity for forestry
- Awareness of and support for forests




## NA S&PF Strategic Plan and Indicators of Forest Sustainability

This Strategic Plan aligns with an internationally recognized set of 7 criteria and 54 indicators, commonly known as the Montreal Process Criteria and Indicators, which are used to monitor forest sustainability at the national level. In 1999, the NA S&PF and the NAASF adopted these criteria and then collaboratively developed 18 base indicators to track trends in forest sustainability across the Northeast and Midwest.[6] This framework is used for State and regional forest sustainability assessments and planning. By tracking changes over time using the same measurements across the entire region, we can identify emerging issues and opportunities. We analyzed resource conditions and trends using information compiled for the criteria and indicators effort as an important part of the NA S&PF Strategic Plan scoping phase. We also used the results of "Forests of the Northern United States," a regional-level sustainability assessment following the criteria and indicators framework that was published as part of the Northern Forest Futures project (Shifley and others 2012).[7]

[6] Read more about the NA S&PF and NAASF forest sustainability criteria and indicators at http://www.na.fs.fed.us/sustainability/base/base.shtm.

[7] The Northern Forest Futures Project is led by the U.S. Forest Service Northern Research Station to examine the issues, trends, threats, and opportunities facing the forests in the region: http://www.nrs.fs.fed.us/futures/.

## NA S&PF Objectives

The NA S&PF Strategic Plan objectives are overarching and long term in nature. When developing our Strategic Plan, we organized the NA S&PF objectives according to four priorities that serve as broad goals (table 1). The first three priorities are the national S&PF priorities from the Cooperative Forestry Assistance Act.[8] These priorities also align with the two strategic goals from our FY 2008–2012 Strategic Plan. We added a fourth priority, "organizational effectiveness," based on the business needs and technical expertise of NA S&PF and input from employees and the Scoping Team. This priority has more of an operational focus, similar to the "management principles" in the NA S&PF FY 2008–2012 Strategic Plan.

Table 1. NA S&PF objectives.

| National S&PF Priority* | NA S&PF Objectives*<br>NA S&PF will: |
|---|---|
| **Conserve and Manage Working Forest Landscapes for Multiple Values and Uses** | A. Contribute to conservation of important forest landscapes across the urban to rural continuum.<br>B. Support sustainable forest management for biodiversity and multiple benefits for people. |
| **Protect Forests from Threats** | C. Support the management of trees and forests for resilience to natural and human-caused disasters and threats.<br>D. Promote forest management approaches that facilitate resilience and adaptation to, and mitigation of, climate change.<br>E. Support efforts to reduce wildfire threats to people, communities, and natural resources. |
| **Enhance Public Benefits from Trees and Forests** | F. Advance conservation and sustainable management of trees and forests for water quality across all landscapes.<br>G. Support a competitive forest industry with diversified markets, forest-related jobs, and sustainable use of woody biomass for energy.<br>H. Support engagement and inclusion of urban residents and communities to maintain the benefits provided by trees and forests. |
| **NA S&PF Priority** | |
| **Organizational Effectiveness** | I. Expand and deliver technical expertise, improve communications and productivity, capitalize on new technology, and ensure employee safety.<br>J. Leverage resources and technical expertise in a transparent and collaborative way with other Federal agencies, State agencies, academia, American Indian tribes, non-profits, and other partners in support of common goals. |

* No priority or ranking is implied by the order in which the priorities and objectives are listed.

For each objective, we present the following:

- **Vision**: A long-range vision statement for the land and resources, looking decades into the future.
- **Critical Issues**: Overview of the issues that led to identifying the objective and provide context for why we feel this objective is important for NA S&PF to address.
- **Our Role and Influence**: A listing of NA S&PF strategies that strongly address the objective. See the table of strategies on pages 21 and 22 for the complete list of all the strategies and the objectives to which they each contribute strongly.

[8] Cooperative Forestry Assistance Act as amended by the 2008 Farm Bill: http://www.fs.fed.us/spf/coop/library/SPF-CF%20handbook.pdf.

Although we developed these objectives based on resource conditions and trends, input from employees and partners, and other considerations outlined on page 3, they also closely align with and carry forward the objectives from the NA S&PF FY 2008–2012 Strategic Plan. When compared to the previous Strategic Plan, this new plan includes renewed emphasis on our technology transfer role, outreach and engagement of urban residents, and climate change.

### NA S&PF Strategies

The NA S&PF strategies are action oriented and primarily focused on a 5-year timeframe. The purpose of the strategies is to outline the role that NA S&PF will play by working with partners to address the national S&PF priorities and NA S&PF objectives. In this document, the strategies are presented as "our role and influence" under each objective. However, since each individual strategy contributes strongly to multiple objectives, we present the strategies as a holistic set in the table starting on page 21. Measures for each strategy will be used to track progress and report annual accomplishments on the Strategic Plan.

*The purpose of the strategies is to outline the role that NA S&PF will play by working with partners to address the national S&PF priorities and NA S&PF objectives.*

## NA S&PF Objectives for National S&PF Priority:

# Conserve and Manage Working Forest Landscapes for Multiple Values and Uses

## Objective A. Contribute to conservation of important forest landscapes across the urban to rural continuum.

***Vision:*** ***Urban tree cover and rural forests continue to be a key feature across the landscape and will cover large, contiguous areas, of which the most special will be permanently protected.***

### Critical Issues

Forests provide enormous environmental, social, and economic benefits. They provide wildlife habitat, clean air and water, recreation, and products that we heavily rely on as a society. From 1990 to 2000, urban areas expanded by 4 million acres, 37 percent of which had been forested (Shifley and others 2012). Seventy-four percent of the forest land across the Northeast and Midwest is privately owned (Smith and others 2009). As urban and developed areas expand and as families pass forest land from one generation to the next, private forests are being converted and fragmented at a rapid rate. Urban expansion is expected to overtake an additional 1.5 million acres of forest land in the next decade; unless conservation and preservation of these working landscapes become a priority, this will continue at alarming rates (Shifley and others 2012).

Forest loss and fragmentation reduce ecological and forest-based benefits and render remaining forests more vulnerable to threats. We need to maintain forests within a broader landscape context. A critical mass of green infrastructure—networks of contiguous forests and corridors of natural lands, working landscapes, and other open spaces—is required to adequately provide the services we rely on.

As urbanization increases and contiguous forests are developed and fragmented, the value of urban forests has become more apparent. Trees and the canopy they provide are recognized for their ability to reduce stormwater runoff, urban heat island effects, and air pollution. Science shows that tree planting increases property values, reduces the incidence of asthma in children, and improves overall community livability (Schwab 2009). There is still a great need to plant, protect, and maintain tree canopy in urban areas. Urban tree canopy assessment and goal setting have become part of an effective approach to the strategic inclusion of trees in water quality and green infrastructure solutions.

### Our Role and Influence—Strategies to Address this Objective

1. Encourage new and support existing landscape-scale partnerships, particularly in multistate priority areas identified in the State Forest Action Plans, to leverage resources and more efficiently achieve results across larger geographic regions.
2. Increase and ensure permanent conservation of important forest landscapes and promote the long-term monitoring of protected lands.
3. Increase conservation and restoration of priority tree and forest landscapes in communities and metropolitan areas through support of State assistance for setting local natural resource goals and policies.

## Objective B. Support sustainable forest management for biodiversity and multiple benefits for people.

***Vision:*** ***The forests of the Northeast and Midwest are characterized by a diversity of species and age classes. Forest owners understand the importance of managing their forest land for their own objectives, forest products, water, wildlife, energy, and many other benefits for current and future generations.***

### Critical Issues

To maintain forest and tree health and to increase resilience to forest threats, we need to actively manage across the spectrum from individual street trees to contiguous forested tracts. The forest threats outlined in Objective C, coupled with inconsistent management of large areas of forest land across landscapes and ownerships, have degraded forest health, hampered natural regeneration, and produced an imbalance of forest age classes in many places. Seventy percent of forests in the Northeast and Midwest are between 40 and 100 years old; young and very old forests are relatively scarce (Shifley and others 2012). Improving the management and health of the region's forests is both critical and challenging, since over half of forest land in the Northeast and Midwest is held by nearly 5 million private family forest landowners (Butler 2008).

Sound forest management can enhance the capacity of forests to provide ecological, social, and economic benefits now and in the future, such as habitat for wildlife; clean water; energy; recreation; better quality of life in urban areas; and economic benefits to those who utilize wood for products, forest-based industry, and related jobs. The growing trend toward producing and consuming local products supports jobs, builds local economies, and reduces energy costs and the carbon footprint associated with shipping goods from distant locations.

### Our Role and Influence—Strategies to Address this Objective

4. Improve the management of trees and forests in priority landscapes by supporting the development and use of management plans at different scales to advance the public benefits provided.
5. Increase the financial viability of forest land ownership by supporting educational opportunities focused on tax incentives, intergenerational transfer of forest land, and access to forest product and other forest-related markets.
6. Sustain and strengthen the knowledge and skills of forest land managers in the areas of tree and forest resource assessment and monitoring, silviculture, arboriculture, biodiversity, and natural disaster response.

## NA S&PF Objectives for National S&PF Priority:

## Protect Forests from Threats

## Objective C. Support the management of trees and forests for resilience to natural and human-caused disasters and threats.

***Vision:*** ***The forests of the Northeast and Midwest are healthy. People understand and recognize threats to healthy forests and work closely with professionals to minimize the adverse impacts of these threats.***

### Critical Issues

Trees and forests are being increasingly threatened by invasive species (insects, pathogens, and plants) and natural disasters, including extreme weather events. From 2006 to 2010, an average of 8.3 million acres of Northeast and Midwest forests were damaged annually by pests such as emerald ash borer, gypsy moth, hemlock woolly adelgid, and beech bark disease (USDA Forest Service 2011a). In addition, millions of acres of forest land are deteriorating as high populations of white-tailed deer suppress tree regeneration and accelerate exotic plant invasions (Pennsylvania Department of Conservation and Natural Resources [n.d.], Shirer and Zimmerman 2010, USDA Forest Service 2012b). The decline in pollinators and increase in white nose syndrome in bats impact pollination of native flowering plants and shrubs in forests (Moisset and Buchmann 2011, U.S. Fish and Wildlife Service [n.d.]). Human-caused stressors such as pollution, forest land conversion to other uses (covered in Objective A), potential impacts from outdoor recreation, and surface disturbance from energy development are also adversely affecting forests (Drohan and others 2012a, 2012b).

Invasive species are diminishing forest benefits, including cultural values. For example, the emerald ash borer, which kills ash trees, is also threatening the American Indian tradition of basket making. To adequately protect forests, we must remain vigilant in detection, monitoring, and treatment; prepare to address new invasives; and manage forests to keep them resilient. NA S&PF works with partners to address these issues across all forest ownerships and has primary responsibility for pest management support on Federal and tribal lands.

### Our Role and Influence—Strategies to Address this Objective

7. Work with partners to enhance the capability for early detection and rapid response to new and potentially harmful tree and forest pests.
8. Provide technical assistance to partners to monitor and evaluate forest pest conditions and impacts, and respond to damaging agents by carrying out the best management practices involving pest prevention and suppression actions.
9. Support management activities that increase tree and forest resilience to and restoration after disturbances.

## Objective D. Promote forest management approaches that facilitate resilience and adaptation to, and mitigation of, climate change.

***Vision:*** ***Our forests are resilient and adaptively managed to limit the negative effects of changes in climate and weather and to take advantage of potential opportunities presented by the changing climate, while continuing to provide sustainable goods and services.***

### Critical Issues

Documented changes that are likely linked to changing climate conditions include significantly altered seasonal weather patterns of precipitation and drought, more frequent days with temperatures above 90 degrees Fahrenheit, a longer growing season, reduced snowpack, increased snow density, earlier breakup of winter ice on lakes and rivers, earlier spring snowmelt resulting in earlier peak river flows, and rising sea-surface temperatures and sea levels (Rustad and others 2012). These changes will affect forest health, growth, and mortality, and over time will likely influence the range of specific tree species and forest ecosystem functions. The changing climate may also lead to stressors such as drought, flooding, and extreme storms. Changing conditions are likely to make forests more susceptible to other threats, including the spread of invasive insects and pathogens and forest fire (Rustad and others 2012). Additionally, U.S. forests sequester a significant amount of greenhouse gas emissions annually (U.S. Environmental Protection Agency 2012), and can be actively managed to further reduce forestry-related emissions while sustaining or even increasing the amount of carbon they store (USDA Forest Service 2011b).

### Our Role and Influence—Strategies to Address this Objective

10. Engage staff and partners in dialogue on climate change and support the incorporation of applicable science into management activities for increased forest resilience and adaptation.
11. Encourage and support tree and forest management approaches and the use of forest products, biomass, and ecosystem service markets that have the potential to mitigate greenhouse gases.

## Objective E. Support efforts to reduce wildfire threats to people, communities, and natural resources.

***Vision:*** ***Wildfire risks to people, communities, and forests are minimized through science-based reduction of hazardous fuels and public education efforts in the wildland-urban interface. Wildfire preparedness and response capabilities across the Northeastern Area are safe, efficient, and effective.***

### Critical Issues

Wildland fires threaten public safety, property, and forests, especially in areas where developed lands mix with rural forests, referred to as the wildland-urban interface. Across the Northeast and Midwest, there are more than 62 million acres of land and more than 14 million housing units within the wildland-urban interface (Stewart and others 2005). The number of human-caused wildfires in these areas is higher, and public safety and the protection of property are of great concern (USDA Forest Service and NAASF 2011). Across the Northeast and Midwest, one-third of the population lives in the wildland-urban interface (USDA Forest Service 2012a). As more land is developed, the wildland-urban interface increases and the protection of human lives and property becomes increasingly more difficult.

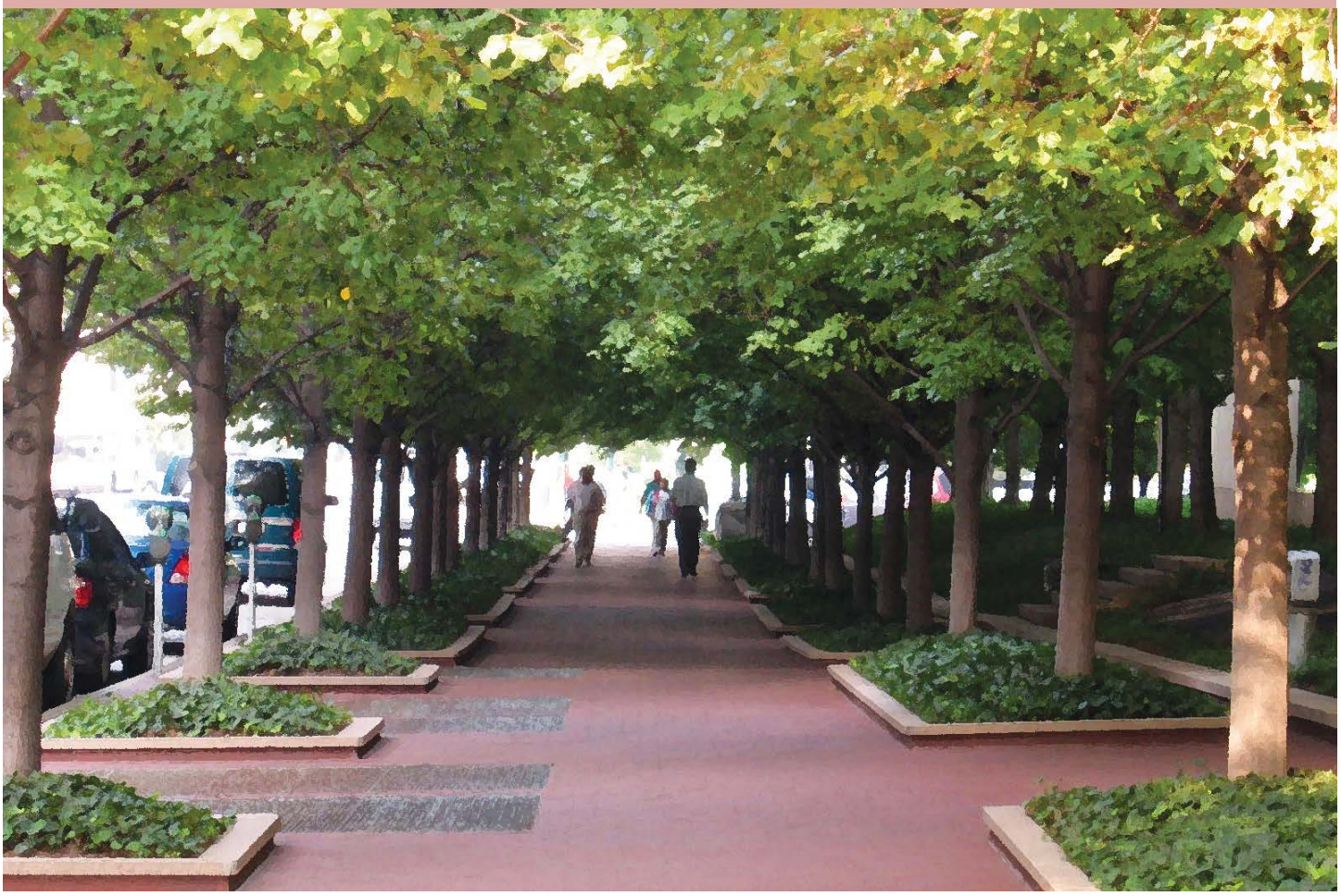
Additionally, NA S&PF is responsible for coordinating Federal firefighting and related emergency response activities in response to all-hazard emergencies in support of the Federal Emergency Management Agency (FEMA) within the National Response Framework (U.S. Department of Homeland Security, Federal Emergency Management Agency 2008). NA S&PF has played a significant role in unprecedented emergencies that have occurred in the Northeast and Midwest, including 9/11, hurricanes, tornados, and extreme storms.

### Our Role and Influence—Strategies to Address this Objective

12. Provide assistance to restore and maintain fire-resilient landscapes through the strategic use of prescribed fire, mechanical treatments, and appropriate fire management techniques.
13. Participate in safe, effective, and efficient risk-based wildfire management decisions by supporting State and community fire programs that strengthen preparedness, response, and firefighting capacity.
14. Promote and support planning and activities that encourage communities in forested areas to reduce wildfire risks and become adapted to fire.
15. Provide response, coordination, and incident management expertise to any emergency management authority or response agency where we have specialized experience and capacity.

## NA S&PF Objectives for National S&PF Priority:

# Enhance Public Benefits from Trees and Forests



## Objective F. Advance conservation and sustainable management of trees and forests for water quality across all landscapes.

***Vision:*** ***Forested watersheds will be a focus of our work to protect water quality. Impaired riparian areas will be restored and highly functional. Stormwater will be effectively managed through improved and innovative green infrastructure solutions.***

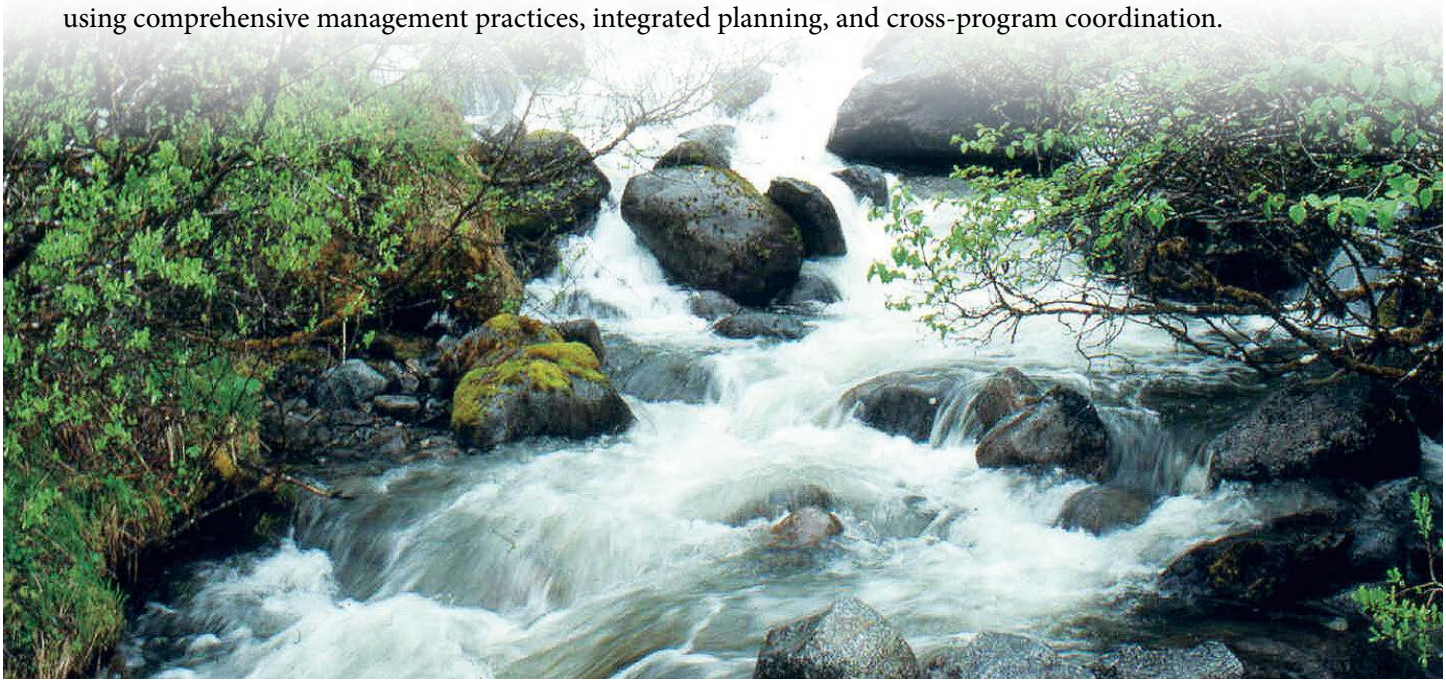
### Critical Issues

Water matters to everyone. Forests are the source of an estimated 48 percent of the region's drinking water supply, with more than 52 million people consuming water that originates from the region's forested watersheds (Barnes and others 2009). These critical forests exist within a patchwork of unconnected landscapes interspersed with densely populated urban areas, post-industrial sites, and agricultural lands. Rivers, streams, and lakes are showing the impacts of development and its associated impervious cover. Forty-five percent of all subwatersheds in the Northeast and Midwest contain impaired waters designated under Section 303(d) of the Clean Water Act (U.S. Department of Agriculture, Forest Service 2013b). Developed areas with overburdened stormwater, septic, and other infrastructure systems dump millions of gallons of sediment, pollution, and nutrient-laden runoff into our waterways (Odefey and others 2012).

When conserved and managed properly, healthy tree cover and forest land are critical to maintaining and improving water quality across the entire continuum from urban to rural. Across the Northeast and Midwest, local governments are seeking validated and measureable practices using trees and forests to meet mandates that address soil and water contamination. Opportunities exist to collaborate with Federal, State, and other partners to develop innovative approaches that advance stormwater management, buffer waterways, connect land, and increase the value and use of once-degraded lands.

### Our Role and Influence—Strategies to Address this Objective

16. Support efforts to include trees and forests in planning and policies for water quality, brownfield recovery, stormwater management, and green infrastructure.
17. Support restoration of tree and forest canopy cover and ecosystem connectivity in critical and impaired watersheds using comprehensive management practices, integrated planning, and cross-program coordination.



## Objective G. Support a competitive forest industry with diversified markets, forest-related jobs, and sustainable use of woody biomass for energy.

***Vision:*** ***A sustainable forest-based industry is thriving throughout the Northeast and Midwest; providing jobs with competitive salaries; contributing to local and regional economies; and providing economical management options for the NA S&PFs' key forestry programs, including Stewardship, Forest Health, Fire, and Urban and Community Forestry.***

### Critical Issues

Across the Northeast and Midwest, over 400,000 people are employed in forestry, logging, wood products, and the pulp and paper sectors—40 percent of all U.S. jobs for these sectors (Shifley and others 2012). The forest products industry and traditional markets face many challenges, including highly competitive and volatile global markets. Ripple effects include loss of jobs; struggling local economies in rural, forestry-based communities; and loss of expertise in forest product manufacturing. From 2008 to 2011, the total value of forest products shipments declined from about $147 to $125 billion. Accordingly, employment declined from approximately 557,000 in 2008 to 431,000 in 2011 (calculated from U.S. Census Bureau 2012 data). Urban wood waste created from insect and disease infestations, extreme storms, and routine maintenance could be better utilized. In addition, biofuels, alternative and traditional wood markets, and ecosystem services are all potential incentives for landowners to manage their forests and keep land forested, allowing them to achieve their economic objectives and environmental sustainability.

### Our Role and Influence—Strategies to Address this Objective

18. Support a sustainable forest industry and related jobs by encouraging forest product diversification, development of new markets, worker training, information exchange, and problem solving.
19. Cooperate with new and existing partners to develop and expand traditional and emerging markets for wood and other forest products, including woody biomass and utilization of trees damaged by insects, diseases, and weather events.

## Objective H. Support engagement and inclusion of urban residents and communities to maintain the benefits provided by trees and forests.

***Vision:*** ***In communities large and small, residents will feel connected to nature and actively care for trees and forest resources. People will understand that healthy forests are fundamental to our well-being and will support monitoring and management needed to maintain healthy forests.***

### Critical Issues

Eighty percent of people in the densely populated Northeast and Midwest live in urban areas that cover 6 percent of the land base (Shifley and others 2012). As the percentage of people who live in urban areas continues to grow, it becomes increasingly important to provide people with opportunities to connect to nature. Urban residents, especially youth, who engage in nature-based activities, including urban and community forestry tree care programs, are more likely to have an affinity for the environment as adults and develop environmentally friendly attitudes and behaviors (Children & Nature Network 2012). Children who have had positive experiences in nature are also more likely to consider nature-based professions as adults. Participation in educational opportunities and hands-on tree and forest stewardship, especially in urban and metropolitan areas where most people live, will lead to life-long support for conservation and sustainable management of trees and forests across the landscape.

### Our Role and Influence—Strategies to Address this Objective

20. Support communication and education activities, notably for urban and metropolitan residents and decisionmakers, to encourage conservation and management of trees and forests, and forest-related products.
21. Support outreach to underserved communities and traditional and nontraditional partners to engage people in programs that plant, protect, and care for trees and forests.

## NA S&PF Objectives for Priority:

# Organizational Effectiveness

An organization's overall effectiveness depends upon a number of factors—how well it manages its resources and sets priorities, how it treats its employees, its relationship with partners and customers, how well it fosters communication and innovation, and whether it effectively uses technology and other tools that allow employees to achieve their full potential, among others. In lean budget times, when reduced budgets often mean doing more with less, an organization's ability to carry out its mission depends even more heavily upon these factors. The objectives and strategies in this section reflect our commitment to continuous improvement as an organization.

## Objective I. Expand and deliver technical expertise, improve communications and productivity, capitalize on new technology, and ensure employee safety.

***Vision:*** ***NA S&PF will be recognized as a center of excellence for its technical support and customer service. We will be leaders in the use of emerging technology. Employee safety, well-being, and respect for diversity will be integral to our operations. We will hold ourselves accountable for results.***

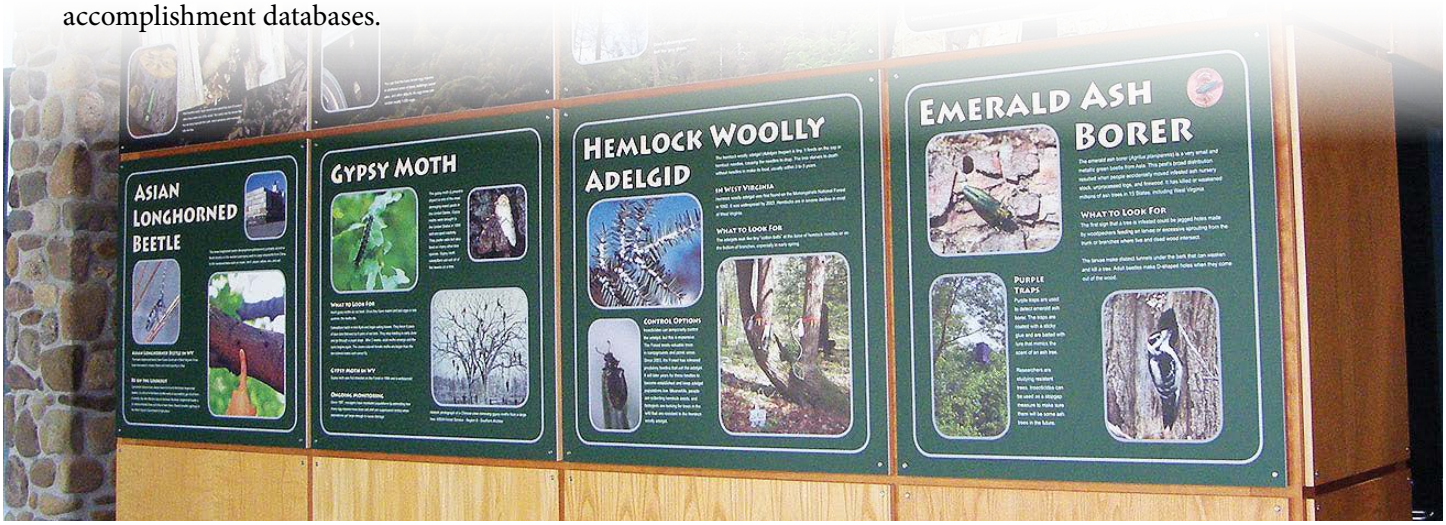
Our information products help build support for forests and the role they play in people's lives. NA S&PF, together with our partners, produces quality tools and information for both natural resources professionals and the public, including students, educators, and underserved audiences. To continue to engage and educate our customers, we need to stay current and active in education practices and the use of social media and other technology for communications and outreach.

Within NA S&PF, we need to consistently share more and better information across units, programs, and levels (Feldman 2004). Similar sharing among U.S. Forest Service branches and State forestry agencies in the Northeast and Midwest would likewise improve access to information; strengthen internal relationships across the organization; and ensure that we use consistent, credible information. Technology can potentially help us meet this challenge in addition to streamlining administrative tasks.

Better communication and outreach will help us cope with likely budget reductions and employee attrition. We also need to boost productivity by building and retaining expertise to ensure that our workforce has the necessary skills and tools to be drivers of positive change. In addition to the expected loss of expertise and institutional knowledge, the loss of capacity in delivering forest conservation leadership has many other internal and external impacts. For example, reductions in travel budgets for Federal and State programs are impacting our collective capacity to deliver programs on the ground. We must meet these challenges without compromising employee safety and well-being, and reduce the negative impact on programs.

### Our Role and Influence—Strategies to Address this Objective

22. Develop and carry out a comprehensive internal and external communication plan to emphasize technology transfer; social media; and education skills among staff, partners, and customers.
23. Create an environment where workers can concentrate on the most important aspects of their jobs by using technology to streamline and automate processes, share expertise, facilitate communication, and provide broad access to important information.
24. Implement a clear process for carrying out the Strategic Plan, including reporting and enhancements to accomplishment databases.



## Objective J. Leverage resources and technical expertise in a transparent and collaborative way with other Federal agencies, State agencies, academia, American Indian tribes, non-profits, and other partners in support of common goals.

***Vision:*** *NA S&PF will be an advocate and regional leader for natural resources that works with traditional partners while seeking ideas and involvement from new partners. We will be collaborative, focused, adaptive, and quick to identify and address emerging issues. Targeted investments, along with those of our partners, will multiply the value of each Federal dollar.*

NA S&PF has long-standing partnerships with the Northeastern Area Association of State Foresters (NAASF); State forestry agencies; and the U.S. Forest Service Eastern Region, Northern Research Station, and Forest Products Laboratory. By sharing our technical expertise and strengths across a broader group of partners, we can further enhance collaboration to achieve shared goals. Agencies and organizations such as the USDA Natural Resources Conservation Service, Animal and Plant Health Inspection Service, and Farm Services Agency; University Cooperative Extension staff; Association of Fish & Wildlife Agencies; American Forest Foundation; U.S. Geological Survey; U.S. Department of Interior National Park Service; U.S. Fish & Wildlife Service; State fish and wildlife agencies; American Indian tribes; and nonprofit organizations, such as The Nature Conservancy, present outstanding opportunities to share expertise and pursue mutual goals.

We are committed to collaborating with State forestry agencies and other partners, especially as it pertains to carrying out the State Forest Action Plans. We also seek to identify and focus on shared priorities among State Forest Action Plans and Wildlife Action Plans.

This objective can be considered a solution that contributes to all other objectives, including our commitment to collaborate with partners on landscape-scale conservation efforts as identified in the Landscape Scale Conservation position paper.

### Our Role and Influence—Strategies to Address this Objective

25. Utilize an Area-level, multidisciplinary, science and technology delivery team to capture and share lessons learned from grant projects and partners, and to identify and focus investments on proven technologies and effective outreach and dissemination models.
26. Provide value-added information to expand the scope of current and historical resource data available to partners, staff, and others through databases, clearinghouses, Geographic Information System (GIS) tools, and other information products.
27. Strengthen collaboration and increase dialogue with other Federal partners whose mission and goals align or converge with ours to deliver stronger and more cohesive services; better leverage Forest Service resources; and provide a seamless interface for States, nonprofit organizations, and landowners.

# NA S&PF Strategies*

The strategies outline NA S&PF's role and our work with partners to address our objectives and the national S&PF priorities. They are action oriented and primarily focused on a 5-year timeframe. The strategies were listed in the previous section as "our role and influence" under each objective. However, since each strategy contributes strongly to multiple objectives, we present them as a holistic set here. The *objectives* column lists the primary objective each strategy addresses as well as additional objectives to which the strategy contributes.

| Strategies for FY 2013–2018—NA S&PF Role to Address the Listed Objectives | Objectives |
|---|---|
| 1. Encourage new and support existing landscape-scale partnerships, particularly in multistate priority areas identified in the State Forest Action Plans, to leverage resources and more efficiently achieve results across larger geographic regions. | A<br>B, C, D, E, F, J |
| 2. Increase and ensure permanent conservation of important forest landscapes and promote the long-term monitoring of protected lands. | A<br>B, C, D, F |
| 3. Increase conservation and restoration of priority tree and forest landscapes in communities and metropolitan areas through support of State assistance for setting local natural resource goals and policies. | A<br>B, C, E, F, H, J |
| 4. Improve the management of trees and forests in priority landscapes by supporting the development and use of management plans at different scales to advance the public benefits provided. | B<br>A, C, D, E, F, G |
| 5. Increase the financial viability of forest land ownership by supporting educational opportunities focused on tax incentives, intergenerational transfer of forest land, and access to forest product and other forest-related markets. | B<br>A, G, I, J |
| 6. Sustain and strengthen the knowledge and skills of forest land managers in the areas of tree and forest resource assessment and monitoring, silviculture, arboriculture, biodiversity, and natural disaster response. | B<br>C, D, E, I, J |
| 7. Work with partners to enhance the capability for early detection and rapid response to new and potentially harmful tree and forest pests. | C<br>B, D, H, I, J |
| 8. Provide technical assistance to partners to monitor and evaluate forest pest conditions and impacts, and respond to damaging agents by carrying out the best management practices involving pest prevention and suppression actions. | C<br>B, D, G, H, I, J |
| 9. Support management activities that increase tree and forest resilience to and restoration after disturbances. | C<br>A, B, D, E, F |
| 10. Engage staff and partners in dialogue on climate change and support the incorporation of applicable science into management activities for increased forest resilience and adaptation. | D<br>B, C, I, J |
| 11. Encourage and support tree and forest management approaches and the use of forest products, biomass, and ecosystem service markets that have the potential to mitigate greenhouse gases. | D<br>B, G, I, J |
| 12. Provide assistance to restore and maintain fire-resilient landscapes through the strategic use of prescribed fire, mechanical treatments, and appropriate fire management techniques. | E<br>B, C, D, G, I, J |
| 13. Participate in safe, effective, and efficient risk-based wildfire management decisions by supporting State and community fire programs that strengthen preparedness, response, and firefighting capacity. | E<br>I, J |
| 14. Promote and support planning and activities that encourage communities in forested areas to reduce wildfire risks and become adapted to fire. | E<br>B, C, D, G, H, I, J |

| Strategies for FY 2013–2018—NA S&PF Role to Address the Listed Objectives | Objectives |
|---|---|
| 15. Provide response, coordination, and incident management expertise to any emergency management authority or response agency where we have specialized experience and capacity. | E<br>C, D, I, J |
| 16. Support efforts to include trees and forests in planning and policies for water quality, brownfield recovery, stormwater management, and green infrastructure. | F<br>A, B, C, D, H, I, J |
| 17. Support restoration of tree and forest canopy cover and ecosystem connectivity in critical and impaired watersheds using comprehensive management practices, integrated planning, and cross-program coordination. | F<br>A, B, C, E, H, I, J |
| 18. Support a sustainable forest industry and related jobs by encouraging forest product diversification, development of new markets, worker training, information exchange, and problem solving. | G<br>B, C, H, I, J |
| 19. Cooperate with new and existing partners to develop and expand traditional and emerging markets for wood and other forest products, including woody biomass and utilization of trees damaged by insects, diseases, and weather events. | G<br>B, C, E, I, J |
| 20. Support communication and education activities, notably for urban and metropolitan residents and decisionmakers, to encourage conservation and management of trees and forests, and forest-related products. | H<br>A, B, D, G, I, J |
| 21. Support outreach to underserved communities and traditional and nontraditional partners to engage people in programs that plant, protect, and care for trees and forests. | H<br>B, C, I, J |
| 22. Develop and carry out a comprehensive internal and external communication plan to emphasize technology transfer; social media; and education skills among staff, partners, and customers. | I<br>All |
| 23. Create an environment where workers can concentrate on the most important aspects of their jobs by using technology to streamline and automate processes, share expertise, facilitate communication, and provide broad access to important information. | I<br>H, J |
| 24. Implement a clear process for carrying out the Strategic Plan, including reporting and enhancements to accomplishment databases. | I<br>All |
| 25. Utilize an Area-level, multidisciplinary, science and technology delivery team to capture and share lessons learned from grant projects and partners, and to identify and focus investments on proven technologies and effective outreach and dissemination models. | J<br>All |
| 26. Provide value-added information to expand the scope of current and historical resource data available to partners, staff, and others through databases, clearinghouses, Geographic Information System (GIS) tools, and other information products. | J<br>All |
| 27. Strengthen collaboration and increase dialogue with other Federal partners whose mission and goals align or converge with ours to deliver stronger and more cohesive services; better leverage Forest Service resources; and provide a seamless interface for States, nonprofit organizations, and landowners. | J<br>All |

* No priority or ranking is implied by the order in which the strategies are listed.

# Putting Our Strategic Plan into Action

To carry out these strategies, NA S&PF leadership is committed to engaging all staff and collaborating to the fullest extent possible with existing and new partners. We will use measures for each strategy to track our progress and share annual accomplishments. As we carry out the strategies in this plan, we will also evaluate and assess progress throughout the 5-year period and adapt our actions based on how our efforts are progressing.

As shown in figure 2, overall key elements of carrying out our Strategic Plan include:

- Engaging employees in annual work planning.
- Coordinating and collaborating with partners.
- Planning annual work and individual activities from the strategies in this Strategic Plan. In turn, individual activities will contribute to annual work planning and over time accomplish the 5-year strategies.
- Committing ourselves to strategic thinking, acting, and learning: we will track and share progress as well as learn along the way, adapting as needed.

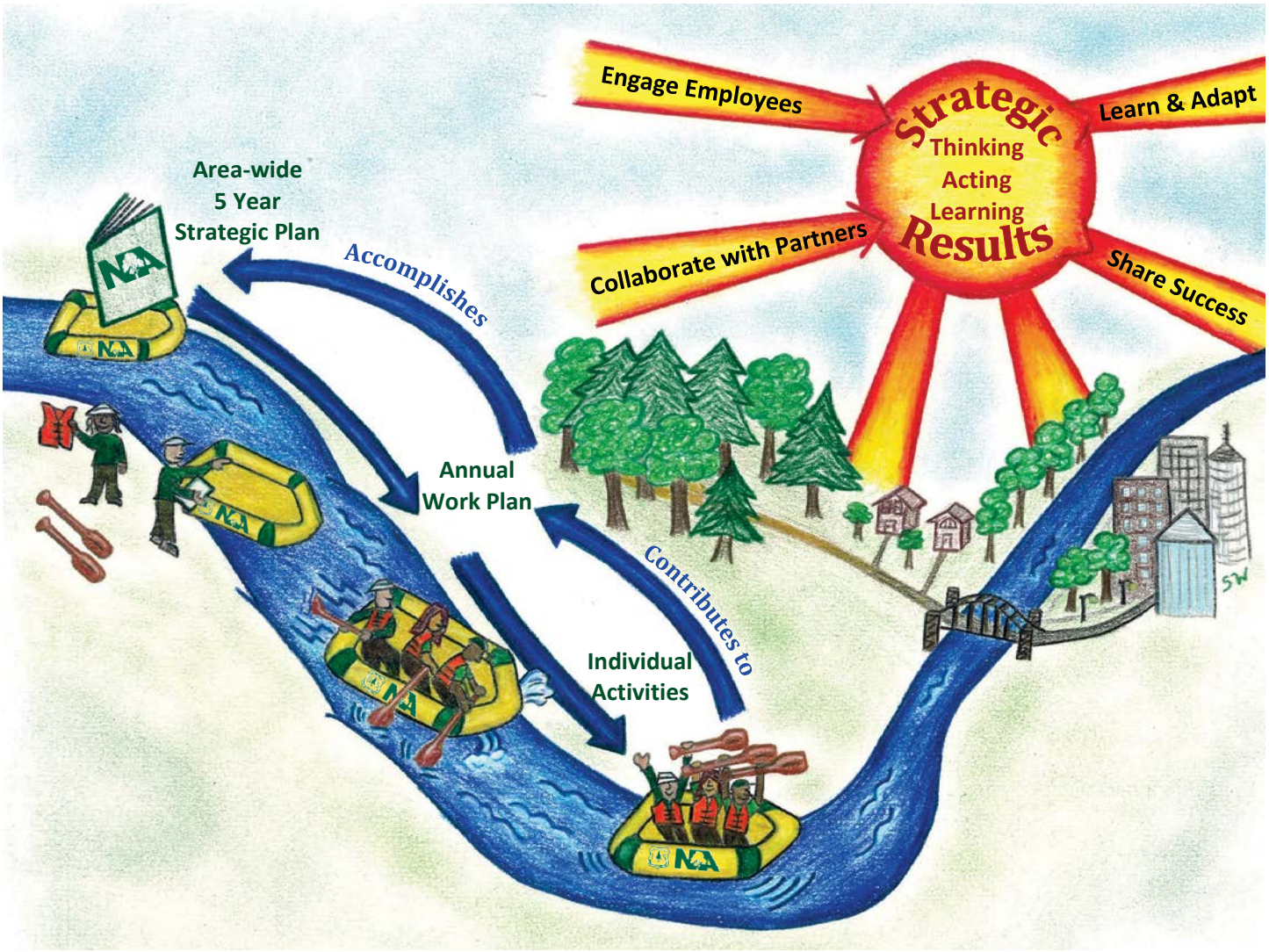



*Figure 2. Implementing the NA S&PF Strategic Plan for Fiscal Years 2013–2018.*

The objectives in this Strategic Plan address specific critical issues and tier to the national S&PF priorities. While they are listed as separate objectives, we recognize the interrelationships between them. Since individual strategies contribute strongly to multiple objectives, we will carry out the strategies in a holistic way and, to the extent that it is feasible or relevant, we will work across program lines in an interdisciplinary manner. For each strategy, we will consider how all S&PF Program areas, activities, and units contribute. The expertise of all staff is integral in supporting the Strategic Plan objectives and strategies to the fullest extent possible in the next 5 years.

We will continue to work closely with our State and other partners as we carry out the NA S&PF objectives and strategies, which in turn support the State Forest Action Plans. S&PF funding and related assistance for both competitively allocated and "core" grants support the States' efforts to carry out their Forest Action Plans. Grantees are also required to show how this funding contributes to addressing the national S&PF priorities, to which the objectives and strategies in this plan are also tiered.

Overall, we will carry out this strategic plan in a collaborative and integrated way to fulfill our mission, as captured by the NA motto: "We work with a diverse group of partners to protect, conserve, and manage forests, community trees, and related resources."

# References


Barnes, Martina; Todd, Albert H.; Lilja, Rebecca W.; Barten, Paul K. 2009. Forests, water and people: drinking water supply and forest lands in the Northeast and Midwest United States. NA–FR–01–08. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Area State and Private Forestry. 71 p. http://na.fs.fed.us/pubs/misc/watersupply/forests_water_people_watersupply.pdf. (5 November 2012).

Butler, B.J. 2008. Family forest owners of the United States, 2006. Gen. Tech. Rep. NRS–27. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 72 p. http://treesearch.fs.fed.us/pubs/15758. (5 November 2012). *Note: "Family forest owners" is a subset of nonindustrial private forest owners. It includes families, individuals, trusts, estates, family partnerships, and other unincorporated groups of individuals.*

Children & Nature Network. 2012. Children & nature worldwide: an exploration of children's experiences of the outdoors and nature with associated risks and benefits. 68 p. http://www.childrenandnature.org/documents/C121/. (8 November 2012).

Drohan, P.J.; Brittingham, M.; Bishop, J.; Yoder, K. 2012a. Early trends in landcover change and forest fragmentation due to shale-gas development in Pennsylvania: a potential outcome for the Northcentral Appalachians. Environmental Management. 49(5): 1061–1075. http://www.ncbi.nlm.nih.gov/pubmed/22447181. (15 January 2013).

Drohan, Patrick J.; Finley, James C.; Roth, Paul; Schuler, Thomas M.; Stout, Susan L.; Brittingham, Margaret C.; Johnson, Nels C. 2012b. Oil and gas impacts on forest ecosystems: findings gleaned from the 2012 Goddard Forum at Penn State University. Environmental Practice. 6 p. doi:10.10170S1466046612000300. http://nrs.fs.fed.us/pubs/42368. (15 January 2013).

Feldman, Susan. 2004. The high cost of not finding information. Knowledge Management World. 13(3). http://www.kmworld.com/Articles/Editorial/Features/The-high-cost-of-not-finding-information-9534.aspx. (5 November 2012).

Moisset, Beatriz; Buchmann, Stephen. 2011. Bee basics: an introduction to our native bees. FS–960. U.S. Department of Agriculture, Forest Service and the Pollinator Partnership. 48 p. http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5306468.pdf. (8 November 2012).

Odefey, Jeffrey; Detwiler, Stacey; Rousseau, Katie; Trice, Amy; Blackwell, Roxanne; O'Hara, Kevin; Buckley, Mark; Souhlas, Tom; Brown, Seth; Raviprakash, Pallavi. 2012. Banking on green: a look at how green infrastructure can save municipalities money and provide economic benefits community-wide. American Rivers, the Water Environment Federation, the American Society of Landscape Architects, and ECONorthwest. 41 p. http://www.sustainablecitiesinstitute.org/view/page.basic/report/feature.report/Report_BankingOnGreen_2012. (10 June 2013).

Pennsylvania Department of Conservation and Natural Resources. [n.d.] Healthy forests—healthy deer: finding the right balance. Brochure. http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_003321.pdf. (17 December 2012).

Rustad, Lindsey; Campbell, John; Dukes, Jeffrey S.; Huntington, Thomas; Lambert, Kathy Fallon; Mohan, Jacqueline; Rodenhouse, Nicholas. 2012. Changing climate, changing forests: the impacts of climate change on forests of the Northeastern United States and Eastern Canada. Gen. Tech. Rep. NRS–99. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 56 p. http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs99.pdf. (8 November 2012).

Schwab, James C., ed. 2009. Planning the urban forest: ecology, economy, and community development. Rep. No. 555. American Planning Association, Planning Advisory Service, Chicago, IL. 156 p. http://na.fs.fed.us/urban/planning_uf_apa.pdf. (5 November 2012).

Shifley, Stephen R.; Aguilar, Franciso X.; Song, Nianfu; Stewart, Susan I.; Nowak, David J.; Gormanson, Dale D.; Moser, W. Keith; Wormstead, Sherri; Greenfield, Eric J. 2012. Forests of the Northern United States. Gen. Tech. Rep. NRS–90. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 202 p. http://www.nrs.fs.fed.us/pubs/40189. (5 November 2012).

Shirer, Rebecca; Zimmerman, Chris. 2010. Forest regeneration in New York State. The Nature Conservancy, Eastern New York Chapter, Albany, NY. 25 p. http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newyork/newsroom/limited-tree-regeneration-threatens-the-future-of-new-york-forests.xml. (17 December 2012).

Smith, W. Brad, tech. coord.; Miles, Patrick D., data coord.; Perry, Charles H., map coord.; Pugh, Scott A., Data CD coord. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. WO–78. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. 336 p. http://treesearch.fs.fed.us/pubs/17334. (25 February 2013).

Stewart, Susan; Radeloff, Volker; Hammer, Roger; Fried, Jeremy; Holcomb, Sherry; McKeefry, Jason. 2005. Mapping the wildland urban interface and projecting its growth to 2030: summary statistics. Evanston, IL: U.S. Department of Agriculture, Forest Service, North Central Research Station. 37 p. http://silvis.forest.wisc.edu/old/Library/Stats/uswuistats.pdf. (7 May 2012).

U.S. Census Bureau, Population Division. 2011. Population and population density (people per square mile) 1910–2010. http://www.census.gov/2010census/data/. (20 September 2011).

U.S. Census Bureau. 2012. Annual survey of manufacturers. Note: includes data for NAICS codes 321 (Wood Products Manufacturing), 322 (Paper Manufacturing), and 337 (Furniture and Related Product Manufacturing). http://www.census.gov/manufacturing/asm/. (8 April 2013).

U.S. Department of Agriculture, Forest Service. 2011a. Forest Health Protection Mapping and Reporting [Online Database]. Forest Health Technology Enterprise Team. http://foresthealth.fs.usda.gov/portal. (4 March 2013). *Note: Acres are summarized from the annual observations and are not cumulative.*

U.S. Department of Agriculture, Forest Service. 2011b. National roadmap for responding to climate change. FS–957b. 32 p. http://www.fs.fed.us/climatechange/pdf/Roadmapfinal.pdf. (8 November 2012).

U.S. Department of Agriculture, Forest Service. 2012a. Northeastern Area State and Private Forestry, Office of Knowledge Management staff using data from geospatial analysis for the State Fire Assistance core allocation formula using the following data sources: 1) U.S. Census Bureau, 2010 Census block geography and the 2010 Census population and housing unit counts; and 2) Radeloff, V.C.; Hammer, R.B.; Stewart, S.I.; Fried, J.S.; Holcomb, S.S.; McKeefry, J.F. 2005. The wildland urban interface in the United States. Wildland Urban Interface Map, version 3. Ecological Applications. 15: 799–805.

U.S. Department of Agriculture, Forest Service. 2012b. Deer can be too many, too few, or just enough for healthy forests. Research Review, No. 16. Northern Research Station. 6 p. http://www.fs.fed.us/nrs/news/review/review-vol16.pdf. (8 November 2012).

U.S. Department of Agriculture, Forest Service. 2013a. Map compiled by Northeastern Area State and Private Forestry, Office of Knowledge Management staff using the following data sources: 1) Land Cover = 2005 North American Land Cover dataset, North American Land Change Monitoring System; 2) Forest Land Ownership in U.S. = Protected Areas Database, The Conservation Biology Institute Edition, 2011; and 3) Forest Land Ownership in Canada = Commission for Environmental Cooperation, Protected Areas, 2008.

U.S. Department of Agriculture, Forest Service. 2013b. Northeastern Area State and Private Forestry, Office of Knowledge Management staff analysis using the following data sources: 1) U.S. Environmental Protection Agency, Office of Water. 2011. Edition 20110425. EPA Office of Water (OW): 303(d) Listed Impaired Waters NHD Indexed Dataset. Washington, DC. http://www.epa.gov/waters/data/downloads.html. (4 March 2013); and 2) U.S. Department of Agriculture, Natural Resources Conservation Service 2009. Watershed Boundary Dataset. Fort Worth, Texas. National Cartography and Geospatial Center. http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/watersheds/dataset/. (8 April 2013).

U.S. Department of Agriculture, Forest Service and Northeastern Area Association of State Foresters. 2011. 2010 statewide forest resource assessments and strategies in the Northeast and Midwest: a regional summary. 51 p. http://www.northeasternforests.org/FRPC/files/1308144846RegSummary-StateAssessStrategy-2011-04-08.pdf. (5 November 2012).

U.S. Department of Agriculture, Natural Resources Conservation Service. 2009. Watershed Boundary Dataset. Fort Worth, Texas. National Cartography and Geospatial Center. http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/watersheds/dataset/. (8 April 2013).

U.S. Department of Homeland Security, Federal Emergency Management Agency. 2008. National response framework. 90 p. http://www.fema.gov/national-response-framework. (11 December 2012).

U.S. Environmental Protection Agency. 2012. Executive summary of the inventory of U.S. greenhouse gas emissions and sinks: 1990–2010. EPA 430–S–12–001. Washington, DC: Office of Atmospheric Programs. 28 p. http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2012-ES.pdf. (8 November 2012).

U.S. Environmental Protection Agency, Office of Water. 2011. Edition 20110425. EPA Office of Water (OW): 303(d) Listed Impaired Waters NHD Indexed Dataset. Washington, DC. http://www.epa.gov/waters/data/downloads.html. (4 March 2013).

U.S. Fish and Wildlife Service. [n.d.]. White-nose syndrome Web site. http://www.whitenosesyndrome.org/. (8 November 2012).

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Bartlett Experimental Forest, NH (Kenneth R. Dudzik, U.S. Forest Service, Northern Research Station)
Women and children walking among trees (Mary Kramarchyk, New York Department of Environmental Conservation)
North Fork of the Blackwater River, WV (Sandra Clark, U.S. Forest Service, NA S&PF)

Page i: Couple walking under trees (Chesapeake NEMO)
Page ii: Painted trillium (Kenneth R. Dudzik, U.S. Forest Service, Northern Research Station)
Page 3: Loons (Gail Michaels, U.S. Forest Service, NA S&PF)
Page 6: Leaves in a stream (Kenneth R. Dudzik, U.S. Forest Service, Northern Research Station)
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Page 16: Processing lumber (Stephen Bratkovich, U.S. Forest Service, NA S&PF)
Page 17: Planting a burlapped tree (Baltimore Parks and People)
Page 18: Invasive plant volunteers (Les Mehrhoff, Invasive Plants Atlas of New England)
Page 19: Seneca Rocks (WV) Visitor Center invasives display (Sandra Clark, U.S. Forest Service, NA S&PF)
Page 20: First Downs for Trees ceremony (Wisconsin Department of Natural Resources)
Page 23: Putting Our Strategic Plan into Action illustration (Sherri Wormstead, U.S. Forest Service, NA S&PF)
Page 24: Ice on white pine seedling (Kenneth R. Dudzik, U.S. Forest Service, Northern Research Station)

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